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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,639	03/25/2004	Joseph M. Ferencz	1927A1	7496

7590 07/19/2006

PPG INDUSTRIES, INC.
Intellectual Property Department
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Pittsburgh, PA 15272

EXAMINER	
COOLEY, CHARLES E	
ART UNIT	**PAPER NUMBER**
1723	

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,639	FERENCZ ET AL.	
	Examiner	Art Unit	
	Charles E. Cooley	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *7-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-12* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

NON-FINAL OFFICE ACTION

Election/Restriction Requirement

1. Applicant's election without traverse of Group I - claims 1-6 in the reply filed on 12 MAY 2006 is acknowledged.

2. Claims 7-12 are thereby withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Information Disclosure Statement

3. Note the attached PTO-1449 forms submitted with the Information Disclosure Statements filed 23 JUL 2004, 4 AUG 2005, and 20 OCT 2005.

Drawings

4. The drawings are objected to because of the following informalities:

a. the sole drawing figure does not comply with 37 CFR 1.84(u):

Numbering of views:

(1) The different views must be numbered in consecutive Arabic numerals, starting with 1, independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheet(s). Partial views intended to form one complete view, on one or several sheets, must be identified by the same number followed by a capital letter. View numbers must be preceded by the abbreviation "FIG."

Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation "FIG." must not appear.

Applicant should also ensure a proper one-to-one correspondence between the specification and drawings in accordance with MPEP 608.01(g) and 37 CFR 1.84(f). The brief description of the drawings and the descriptive portion of the specification require revision in accordance with the above drawing objection.

Correction is required.

5. Applicant should verify that (1) all reference characters in the drawings are described in the detailed description portion of the specification and (2) all reference characters mentioned in the specification are included in the appropriate drawing Figure(s) as required by 37 CFR 1.84(p)(5).

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment. Any replacement drawing sheet must be identified in the top margin as "Replacement Sheet" (37 CFR 1.121(d)) and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheets must be clearly labeled as "Annotated Marked-up Drawings" and accompany the replacement sheets.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Specification

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The abstract is acceptable.

8. The title is acceptable.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Johnson et al. (US 4,344,710).

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated (col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving material into the extruder and one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector. The patent to Johnson et al. (US 4,344,710) discloses an

extruder 30 comprising one or more rotating screws; heating systems 34 surrounding the rotating screw(s) for heating material in the segment; an additive injector 24 for injecting additives into a section of the extruder at an injection position between the inlet 30 and the outlet 38; wherein the injector includes a pressure vessel 100, and a flow regulator 118 between the pressure vessel and the injection position; a source of pressurization coupled to the pressure vessel for pressurizing the pressure vessel (col. 2, lines 3-5); and a pressure regulator 110 capable of controlling the pressure to any desired value in the injection line 106. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector as taught by Johnson et al. '710 for the purposes of enabling the injecting of a plurality of diverse fluids from a source to an injection zone of the extruder and to control the amount of fluid injected (col. 1, line 62 - col. 2, line 2).

12. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Chang et al. (US 5,318,431).

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated

(col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving material into the extruder and one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector. The patent to Chang et al. (US 5,318,431) discloses an extruder 1 comprising one or more rotating screws; heating systems 17 surrounding the rotating screw(s) for heating material in the segment; one or more additive injectors 27 for injecting additives into a section of the extruder at an injection position between the inlet 13 and the outlet 19 (the injectors can be located at any desired position along the extruder as taught by col. 6, lines 16-32); wherein the injector includes a pressure vessel 53, and a flow regulator 43 between the pressure vessel and the injection position; a source of pressurization 56 and/or 63 coupled to the pressure vessel for pressurizing the pressure vessel; and a pressure regulator 47, 57 and/or 61 capable of controlling the pressure to any desired value. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector as taught by Chang et al. '431 for the purposes of enabling the injecting of a plurality of substances from a source to an injection zone of the extruder and to control the amount of fluid injected thereby altering the composition of the extruded product to a desired state and to control the melt temperature of the composition (col. 3, lines 23 - col. 4, line 22).

13. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (US 5,667,299) in view of Rizvi et al. (US 5,120,559).

Mizoguchi et al. (US 5,667,299) discloses in Figures 1-8 a single (col. 9, lines 29-33) or twin-screw extruder (Fig. 8) comprising one or more rotating screws 5; a plurality of adjacent segments 3a-3d surrounding the rotating screw(s), each of the segments including a cooling system 7a-7d for cooling material in the segment, and a heating system 4a-4d for heating material in the segment, wherein the cooling system and the heating system of each of the segments can be selectively, independently operated (col. 3, lines 8-18 and col. 7, lines 15-18), one of the segments having an inlet 6 for receiving material into the extruder and one of the segments having an outlet (a die - col. 1, lines 41-44) for discharging material from the extruder; wherein each cooling system includes a cooling fluid inlet and outlet in each segment as seen in Figure 1. Mizoguchi et al. thus discloses all of the recited subject matter with the exception of the recited additive injector. The patent to Rizvi et al. discloses an extruder 20 comprising one or more rotating screws 22; heating system 30 surrounding the rotating screw(s) for heating material in the segment; one or more additive injectors 32, 46 for injecting additives into a section of the extruder at an injection position between the inlet 18 and the outlet 90; wherein the injector includes a pressure vessel 51, and a flow regulator 68 between the pressure vessel and the injection position; an inherent source of pressurization coupled to the pressure vessel 51 for pressurizing the pressure vessel since the vessel is pressurized; a pressure regulator 70 capable of controlling the pressure to any desired value (col. 5, lines 32-39); and a pre-mix hopper 10, 14 and a

mechanical feeder (the screw between 12 and 18) extending from an exit of the pre-mix hopper to the inlet 18 of the extruder 20. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the heated/cooled extruder of Mizoguchi et al. with an additive injector and hopper with feeder as taught by Rizvi et al. for the purposes of enabling the injecting of a plurality of substances from a source to an injection zone of the extruder and to control the amount of fluid injected thereby altering the characteristics of the extruded product to a desired state (such as texture, appearance, flavor, viscosity, pH, color), and to premix multiple materials before entering the extruder via the hopper and feeder (col. 1, lines 6-10 and lines 43-47; col. 7-15 and lines 53-67; col. 4, lines 42-53; and col. 5, lines 31-39).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited prior art discloses heating and/or cooling systems for extruders; additive injecting systems for extruders; and hoppers with mechanical feeders for mixing/feeding materials into the inlet region of an extruder.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. All official facsimiles should be transmitted to the centralized fax receiving number 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles E. Cooley
Primary Examiner
Art Unit 1723

14 July 2006